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Wildlife and Related Natural Resources

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JOHN N. DALTON, GOVERNOR

Commission of Game and Inland Fisheries

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COVER: Bobcat, by P.T. Butler, Warrenton

Editorial

OPERATION RESPECT

One weekend in mid-September more than 150 of Virginia's sportsmen leaders, private landowners, business owners and government officials met to seal the fate of the slob sportsman. *Operation Respect* is the name they adopted for the program they hope will be the turning point for sinking sportsmen's ethics. Sportsmen were hit below the belt by the "Guns of Autumn" and other TV and movie attacks on the integrity of their sport. These cheap shots smarted all the more because they had an aura of truth to them. All sportsmen knew there were those in their ranks that didn't measure up, but felt there was little they could do about it. After all, anyone with \$5.00 can buy a license. The purpose of the *Operation Respect* Conference was to find what could be done, what must be done, and how to go out and do it.

One fact brought out was that 50% of a sportsman's attitude comes from the influence of friends and relatives. The sportsman's sphere of influence is larger than he may realize, so exemplary conduct is rule number one.

The other major influence on conduct is peer pressure. For too long sportsmen have looked the other way and tolerated slob on the fringes of their sport. In the words of Law Enforcement Chief John McLaughlin: "If an outdoorsman knew that when he strayed from the straight and narrow even his

best friends would turn him in, what a difference it would make." To implement this, a CB Channel 9 Call System was announced making it easier to reach a game warden. Wardens will monitor CB Channel 9 for game law violation reports. A toll-free state number for calling in violation reports was strongly recommended by the group to assist in the shape-up effort.

The final phase involves the youth. Thorough and proper training in all aspects of nature, resource management and sporting technique was a concept the group pledged to work toward. Although an essential part of the training process, safety lectures are no longer enough. The modern outdoorsman must understand ecology, proper game management and the traditions of sportsmanship to fill his proper place.

Who's going to pick up the tab for all this? The sportsmen themselves, of course. There was, as usual when the chips are down, a unanimity of opinion among sportsmen present that they would pay what was necessary in increased license fees to fund this ambitious program.

Game Commission Deputy Assistant Director Jack Randolph summed it up by saying: We must ensure that *Operation Respect* starts here, lives forever and carries a plea and a warning to all who share our wildlife resources."—H.L.G.

Letters

EAGLE CONTROVERSY

The article "Should We Fire the American Eagle?" in the July issue was an insult to my intelligence and I hope to many others. I find it hard to believe that an educated American would advocate dismissing or abolishing our national symbol while others are exhibiting disrespect for our flag and national anthem. Because these negative forces are at work is all the more reason to expend every effort to support and uphold our national symbol and institutions.

Jackson M. Abott
Alexandria

The article that appeared in our "Outdoor Notebook" section was meant to be a facetious one. We are sorry if you took us seriously!—Asst. Editor

BLACK—COPPERHEAD HYBRID?

A few years ago in the school where I was teaching, some talk was circulating to the effect that there had been instances in Virginia of blacksnakes and copperheads inter-breeding. If this is true, a very dangerous situation could arise if the off-spring resembled the blacksnake. I realize this may sound a little silly, but I would appreciate your comment on the subject.

Concerned Citizen
Woodbridge

The blacksnake-copperhead hybrid story is a very popular folk tale in Virginia. It is probably so convincing because it reinforces people's basic fear of all snakes. The two types of snakes are in different families which makes the possibility of such a hybrid like crossing a cow and sheep or a deer and a pig.—Editor.

SPORTSMAN SPEAKS UP

After reading the letter in the August issue, I would like to remind you that the majority of your readers are and should be composed of sportsmen. Though I enjoy all of your magazine, I feel you need to put more emphasis on hunting and conservation articles in *Virginia Wildlife*. Also, I hope to see some good bowhunting articles soon.

Bob Whittemore
Columbia

It has never been our intention to ignore sportsmen as we realize what an important contribution they make to our magazine and the fact that the Game Commission couldn't exist without them. As for bowhunting articles, we're including them in the next several issues.

—Asst. Editor

Bluebird Boosters Wanted

Supporters are needed to help this beautiful bird make a comeback.

By Jeanne Price

As I walked out my kitchen door, two adult bluebirds, a male and a female, flew into a holly tree just four feet away. They sat side by side and apparently were very upset. Both seemed to be appealing to me in soft nervous chitter-chatter. What could be wrong? They should have been busy feeding their young in the bluebird box about 100 feet away.

I wondered again if the male could be the little orphan ("Bluebird on My Shoulder," *Virginia Wildlife*, July 1975). Did he need my help again? As I walked over to their box they flew about me still chattering. Even before I got to the box I could see what was frightening them. A five foot long black snake was attempting to climb the greased pole to their house. The snake was promptly transported to another part of Gunston Hall where he couldn't disturb precious bluebirds. Here we put the welfare of Eastern bluebirds above all else!



Photos by John Price



Bluebird boxes are one way to help increase this small bird's numbers.

When the colonists first came to America they found "Blew Birds" or "Blew Robins" everywhere. In 1712 Mark Catesby sailed from England to visit his sister, who was married to Dr. William Cocke, a Williamsburg doctor and later secretary to the colony. Catesby sketched the birds and plants he found in Virginia from life and described them for a book he hoped to publish. Here is what he had to say about the beloved "Blew Bird":

"This bird weighs 19 penny-weight and is about the Bigness of a Sparrow. The Eyes are large. The Head and Upperpart of the Body, Tail and Wings are of a bright Blew, except that the Ends of the Wing-Feathers are brown. The Throat and Breast, of a dirty Red. The Belly white. Tis a Bird of a very swift Flight, it's Wings being very long; so that the Hawk generally pursues it in vain. They make their Nests in Holes of Trees, are harmless Birds and resemble our Robin-red-breast. They feed on Insects adult only. These Birds are common in most Parts of North America, I having seen them in Carolina, Virginia, Maryland and the Bermuda Islands."

In Colonial times there were many who kept daily journals and recorded the birds, animals and flowers they saw around them. Philip Fithian, the tutor for Robert Carter III's seventeen children at "Nomini Hall" in Westmoreland County, wrote on March 11, 1774:

"The finest morning we have yet had: the Robbins and blue Birds singing all around us."

But where has our little Eastern bluebird gone and why don't we still have them "singing all around us?" There are many people living today who have never seen a bluebird outside of a bird-book or a greeting card. The bluebird population has been reduced as much as 60 to 90% in the past few years, especially after the devastating winters of '76, '77 and '78. Since bluebirds seldom come to a birdfeeder, their food supply is limited when frost kills the insects and snow covers the berries and dried fruits they feed on. Most of the birds remain in this area for the winter.

Some people have managed to entice them to feeding stations that are out in the open with raisins and cornbread. Many people are deliberately planting trees and shrubs that can become an important source of winter food such as the American holly, dogwood, red cedars, privet, Staghorn samacs, multiflora rose, pyracantha, Virginia creeper, sour gum, Amur honeysuckle, inberry, bittersweet and others.

Just as important, bluebird lovers are putting up specially designed houses, and many have bluebird trails of several boxes, each box 100 yards or more apart. Bluebirds have had a housing shortage for many years. They are cavity-nesting birds and have depended on trees and old fenceposts. With the wider use of chain saws, fewer dead trees are left standing and metal or concrete fenceposts have replaced the wooden ones. With the importation of the English sparrow in 1851 and starlings in 1880, the competition for natural cavities was too much for the gentle and unaggressive bluebird.

Alien birds, raccoons and snakes make life hazardous. Starlings and sparrows will peck holes in the eggs or, finding an adult on the nest with wings outspread to protect her babies, they will peck her head to pieces.

To protect the nests from climbing predators, we always mount our Gunston Hall boxes five feet from the ground on galvanized pipe and coat the pole with axle grease. Raccoons can be discouraged with "coon guards" or baffles.


One of the saddest hazards to bluebirds and other cavity nesting birds was discovered in certain tobacco growing states a few years ago. Attracted to the rain caps on the smokestacks of curing barns, many birds slipped down the chimneys to the burner below. Even though this happened in winter and early spring when the burners were not on, the birds were trapped and died. Before conservation groups brought this to the attention of the farmers, it is estimated that two million dead bluebirds were shoveled up between 1947 and 1954. Now most farmers cover the openings of the smokestacks with screens.

The most hopeful sign for the bluebird has been the organization of the North American Bluebird Society in 1978. Many people were moved by the plight of the bird through reading "Song of Hope for the Bluebird" by Larence Zeleny in the June 1977 *National Geographic* magazine. Hundreds of concerned readers wrote for information on nesting and roosting boxes, bluebird trails and how to monitor them, how to cope with the bird's enemies and many other subjects. As a result, the Society was formed to assist in the recovery of the three species of North American bluebirds — Eastern, Western and Mountain.

Anyone who would like to know more about this non-profit organization should write: North American Bluebird Society, Box 6295, Silver Spring, Maryland 20906.

Me and My Pocketknife

By Dan M. Russell



**A body can begin
to view his knife
as an old friend.**

Photo by Spike Knuth

"Hey! Let me see that knife you got there. What kind is it? Want to sell it? Trade it? Swap or Drop? What you say, huh?"

In my county we had what we called a Trade Day. It was combined with livestock sales day. During the livestock sale all sorts of trading went on. You could take along whatever you wished to swap; like guns, dogs, mules, antiques — anything.

One Trade Day I was sitting on the tailgate of a pick-up truck while my neighbor went to collect for a weaner calf he'd sold. With my mind idling, soaking up the April sunshine and feeling its thaw inside, I was slicing thin proportioned shavings off a block of soft cedar wood when this trader fellow came up and reached over for a look at my knife.

"Hey! I never even heard of this kind of knife before. Can't make out what's on the blade. Looks like 'U-l-s-t-e-r'. Must be an off brand. Made in the U.S. anyway, huh. It's about used up though. Can't

be much good steel in a off brand like this. Got three blades, huh. And pretty good handles, not bone, but they look good, and old. Chipped a little. Maybe I could put new blades in it. Might could get a little something out of it, huh.

"Well, what you say? Want to sell it, or trade? Swap or Drop? You want to Drop, I guarantee whole blades, whole handles and whole back-springs. Good knife. Better than what you got there just to whittle toothpicks and make shavings, huh. Got a couple more here, take your pick. Well, what you say?"

"No." His ceaseless hawking finally penetrated my reverie.

"What? Why, you must be nuts. I'm giving you the best deal, anybody could see that. Why you want to keep that old worn out thing? Take me lots of time just to fix it up to get rid of it."

"You got a friend?"

"Sure. What's that got to do with it?"

"Known him for twenty years or so?"

"Yeah, maybe. I guess so. So what?"

"Want to sell him? Trade him? Swap or Drop?"

"Cheez! You mut be nuts, I..."

"Well, I suppose I could tell you some things about this old 'used up' knife. In the first place it was given to me. A gift, you understand? Then, I've carried it around with me for over twenty years now. I've used it to cut, splice, scrape and hammer. As a screwdriver, butcher knife, skinning knife, carving knife, a trimmer and paint stirrer. Used it to cut a birthday cake. Make the kids whistles out of hickory every Spring when the sap got up enough to slip the bark. Cut sling-shot crotches from forked persimmon branches for little fellows and scraped the thorns off of roses and sticky flowers so the little girls could hold them. Some of those kids are grown now, with their own families. And more coming along every year wanting the same things. I've used it to dig up wild flowers like butterfly bush and violets and cinnamon fern from the woods and transplanted them near the house where the family could see them more often.

"I've used it getting a mess of wild greens in the fields each Spring and in the garden to trim up cabbages, radishes, onions and ears of corn. Used it to peel turnips, apples and carrots to eat raw when they're good and fresh. And to slice pickles and to spread mustard or jelly on a slice of bread. Used it to open a can of pork and beans or sardines for lunch, then use it for a spoon or spear if none was handy.

"Fishing would be nothing without my pocket-knife. Wouldn't be on the creek without it. Use it to cut a willow or cane for a fishing pole. Use it to dig worms from under a log, to cut bait, clean and scale fish or clean a mess of frogs and then to dig the goo out from under my fingernails. Used it to scrape out bee stingers and to pick out splinters. Cut a splint for a broken finger once. Dug out splinters and thorns from my dog's paws and scraped ticks from his ears.

"I can't exactly say that knife has saved my life but I'd have been at a great loss without it, for sure. And, my life has been so much more pleasant because of it. I've fashioned fishing plugs and bobbers from soft pine, cedar and balsam wood. Whittled out decoys and silhouettes. Even cut off a chunk of an old tire and made a plug to stop up a hole in the bottom of my boat when I got a rip going over a rocky riffle. Saved that fishing trip.

"Used that knife to scrape the wax and propolis off my bee hive frames and cut the comb out when the honey was ready. Opened jars and punched milk cans. You can see on my pants, most of my right front pockets have a faded spot where the knife rides along wherever I go.

"Or take hunting, now. Well, I've used it to pick out a shell stuck in the chamber, especially on my old .22 single shot. And scraped the varnish off my old shotgun when I refinished it with boiled linseed

oil. Used it to clean my game — rabbits, squirrels, quail, doves and grouse. Once an old friend and I both got our bucks at the same time and we used this knife to field-dress them. Got that nick in the blade when we used a rock to pound the blade through the pelvis bone. That old buddy is gone now. Got a lot of nicks and scratched places, all in the line of duty. It got some pits from acid when I used it to scrape battery terminals. A piece is broken out of a blade where I used it as a screwdriver and one blade is short where I had to reshape it after breaking the tip digging a nail out of my boot.

"I also recall losing it on several occasions but I always missed it and it worried me till I found it again. Once, after cleaning a rabbit in the field I stuck it in a dried up cornstalk to free my hands to put the rabbit in my coat. In a hurry to catch up with the others I forgot the knife. Time and miles later on I missed the knife. I knew exactly where it was. While the others waited patiently at the car, I went back and pulled my knife out of the cornstalk. That was an especially good hunt. I let a fellow use it once. He kept it for a month or so. I knew, of course, he'd return it but I got to thinking he might lose it so I drove twenty-six miles over to his place to get it. No, it didn't bother him, or me either. He understood what a man's knife can mean to him.

"When a shed door hasp rusted off and the door wouldn't stay shut, I whittled a latch out of wood that still works. Never bothered to replace the hasp.

"I'd be hard put to figure how a friend could have been more helpful and dependable or more of a companion than my pocketknife. It sort of soothes the nerves just to sit and make do-nothing shavings out of a piece of soft cedar when a person has lots to think about or nothing special on his mind.

"I've even fashioned out a couple of owls from cedar for people who collected such trinkets and it was good to see how they appreciated a piece of wood I'd carved out in the image they wanted. This knife of mine has been very dependable and it's paid me back many times over for the small amount of care I've had to give it over the years.

"It might be hard for a fellow that likes to trade, such as you, to understand anyone getting so attached to anything so simple as a knife but you see, it's like my knife and my friends occupy a similar place in my notion of values. They are much the same. I couldn't sell or trade my friendship or my friends. Neither could I sell or swap my knife or its companionship. Be they half-bladed, one-handled or with weak backsprings — or one-eyed, bow-legged or otherwise disabled. How do you explain the difference between a friend and a companion? Over the years the words take on the same meaning. My pocketknife? My friends? You see what I mean?..."

"Yeah, sure. You don't want to swap. I gotta go. see ya.... Say fellow, wait up! Let's see that knife you got in your pocket. Not much count, I'll bet. Want to sell it, or trade? Swap or Drop?"

The outdoors is filled with intriguing sounds, but few are more thrilling than the distant call of the Canada goose. Deep and melodious, it is a restless call of the wild, its notes pitched to the tunes of far-away places. In autumn it is the call of a visitor from another nation, fresh off the Canadian tundra, and a wing beat ahead of the winter winds. Later it is a sign of spring, the call of a bird headed north now in search of a nesting place.

These are the nomads, the migrant geese, big flocks of birds nurtured by the best biological brains of two nations.

But in Virginia's Piedmont, that vast region of rolling hills stretching east from the Blue Ridge Mountains to eventually fade into the flat coastal plains, there is another goose, genetically the same, but one content to live out its life in the farm-lands.

These birds are also restless at times, and the familiar call is just as wild — but there are no migrants in the small flocks that skim the rooftops and circle the farm ponds. Instead they are on route from one pond to another — searching for a winter home in the fall and for a safe place to bring off a brood in the spring.

They are local birds, Canada geese that have adopted the Piedmont as their permanent home, a place to abandon the nomadic life — a place to live and die and rear their young.

Just how many hundreds of geese live in Virginia's Piedmont is anybody's guess. Their numbers are in the thousands, but they do not approach the half million or more Canadas that winter on Maryland's Eastern Shore, one of America's truly great goose hunting regions. Flocks in excess of a hundred birds are fairly common. John Anderson of Keswick says the flocks on his pond range up to 300 birds during the cold winter months.

Just as evasive as the estimated population is the origin of the Piedmont geese. There is some feeling that the birds are the offspring of a big flock of honkers that lived for years on a pond at Brackets, the Louisa County farm of the late Carl Nolting, a pre-World War II director of the Commission of Game and

Geese Down in the Piedmont

By Bob Gooch



Photo by Spike Knuth

Inland Fisheries. But Anderson thinks his geese are the progeny of a resident flock in the Blue Ridge foothills to the west of his farm.

It is reasonable to assume that over the years migratory birds have joined the local flocks and elected to stay rather than return to the rigors of the Atlantic Flyway.

Many pond owners encourage the geese to use their waters, but few do so more enthusiastically than does Johnny Anderson. Like so many lifelong hunters, Anderson now finds more pleasure in managing his land and ponds for wildlife than he does in hunting.

"I was first a fox hunter and then a deer hunter," said the Buckingham County native who has been a Charlottesville excavating contractor for thirty years. "I've probably killed my last deer," he added. Anderson does not object to hunting, but he now finds more pleasure in just watching game.

The Canada goose is the primary beneficiary of Anderson's interest in wildlife.

"I feed them every day of the year," said Anderson.

The honkers on Anderson's pond get 5 gallons of shelled corn and another 5 gallons unshelled every morning. The busy contractor's occupation has conditioned him to rising early, and the geese feeding routine is at first light, or soon thereafter — usually between 5 and 6 A.M. He estimates his annual feeding costs at slightly over a thousand dollars.

While the feeding pond is open most of the year, it may freeze from shore to shore during the cold winter months. The geese keep a patch of water near the shore open, however, and it is there that Anderson feeds them.

Pond owners like Anderson can do much to attract the handsome honkers to their waters.

The Canada goose is primarily a grazing bird, spending more time ashore than it does on the water. It avoids tall grass and weeds, however, preferring clipped fields or grazed pastures where its alert eyes provide quick warning against predators. The rolling hills that flank Anderson's ponds grow hay for his cattle and horses, and the geese love to roam those well clipped fields. The birds are more quickly attracted to a pond in a well grazed pasture or in a manicured hayfield than they are to one surrounded by weeds and tall grass.

The honkers also like islands in lakes or ponds. Like the clean fields, the open water gives them protection. This is a feature the pond owner might consider in planning a new pond.

Some pond owners place big wash tubs, grim reminders of the Great Depression, on stakes just above the water. They prove attractive to nesting geese.

Surprisingly, there is little goose hunting in the Piedmont region. Even avid hunters refrain from shooting the birds. Most are more attuned to upland game, deer, and turkeys than they are to waterfowl. Few purchase waterfowl stamps.

Hunters and landowners alike appear content to have the handsome birds around — to listen to their gabble and to enjoy their familiar V formations against the fall or winter sky. Many landowners who permit hunting for other species are



Preserves in the Piedmont have been responsible for the concentration of geese in this unlikely spot.

protective of the geese. Johnny Anderson does not hunt his geese, nor does he permit others to do so.

Anderson's interest in managing the geese is a natural progression in the life of a serious and mature hunter. Others of a like mold have preceded him.

Way back in 1924 the late A. B. Williams founded a refuge for geese on the James River below Richmond. Like Anderson he provided food, cover, and protection for the birds and eventually built the refuge flock up to more than three thousand birds. He willed the refuge to the U.S. Fish and Wildlife Service and today the area is known as the Presquile National Wildlife Refuge,

an important wintering ground for ducks and geese.

To the south near Ansonville, North Carolina, the late Lockhart

Hunters have preserved a lively population of Geese in an unlikely spot.

Gaddy, a dedicated waterfowler whose interest in waterfowl transcended his love for hunting, was feeding ten to twelve thousand geese on his farm and ponds when he died in 1953. Gaddy Pond later became

the very heart of the Lockhart Gaddy Refuge.

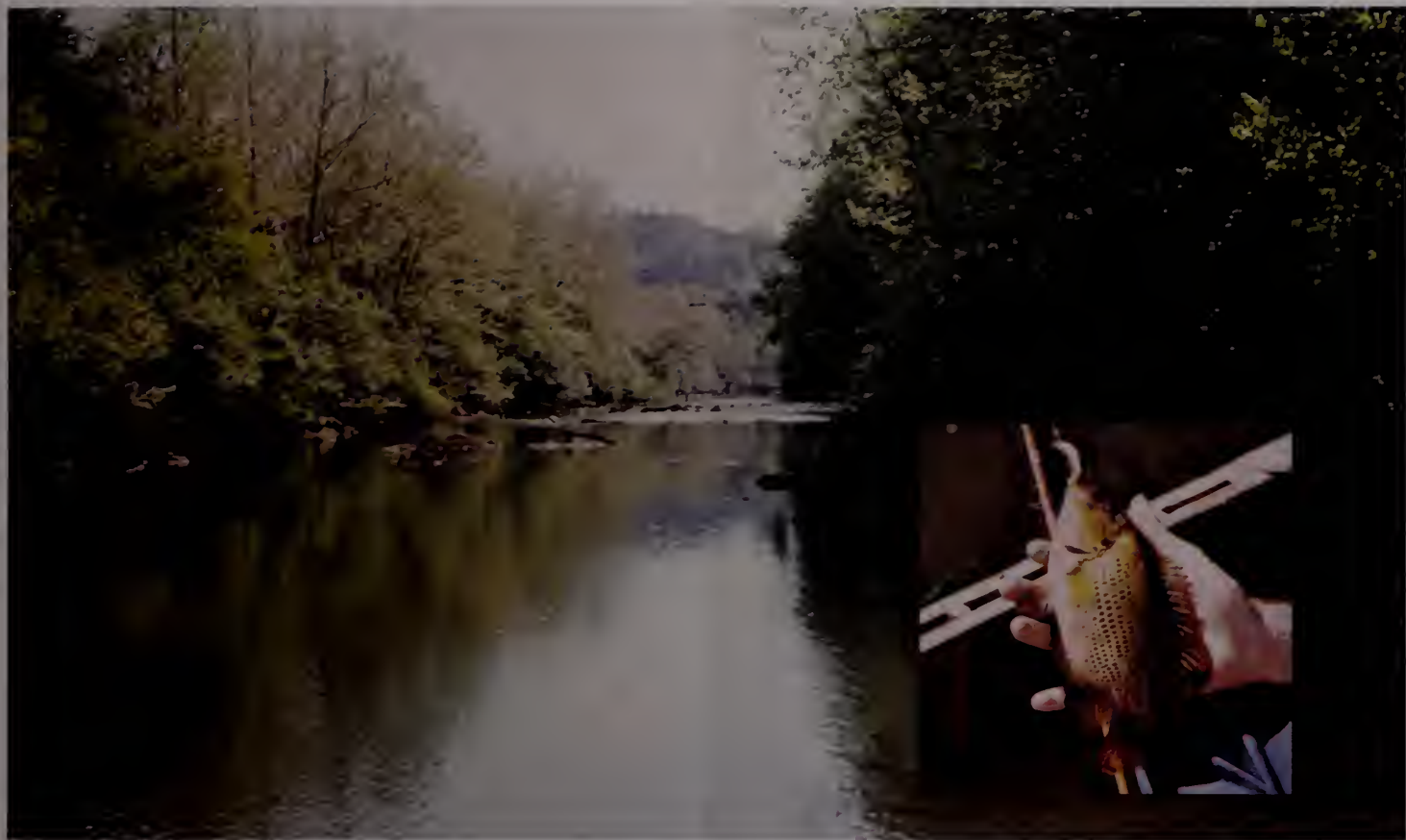
One of the better known private goose refuges in the Jack Miner Sanctuary near Lake Erie in Kingsville, Ontario. It, too, was the brain child of a self-trained naturalist, a hunter, trapper, and farmer who soon after the turn of the century turned the family farm into a sanctuary for ducks and geese. It became the banding grounds for honkers that flew the Atlantic coast, and Jack Miner bands turned up throughout the big Atlantic Flyway. This famous sanctuary is now administered by the Jack Miner Foundation.

The Jack Miners, the A. B.

Williams, the Lockhart Gaddys, and the John Andersons are good examples of serious hunters turned conservationists, dedicated waterfowlers turned refuge builders, and mature outdoorsmen for whom hunting and game are a way of life. For them hunting is far more than a passing fancy.

Because of them the world is a better place to live — and it is so because early in their lives someone took the time to teach them to hunt.





ROCK BASS

Hard-fighting Sunfish of the Rocky Rivers

By Bob Gooch

I first met the little rock bass on the Cowpasture River many fishing seasons ago.

While camping with our families in Douthat State Park, a friend and I launched a light cartop boat at a highway bridge and floated downstream to another public crossing that provided a convenient take-out point. We didn't realize it then, but in light of current interpretations, I suppose we were trespassing. The sparkling Cowpasture is a picturesque stream there, just above the point where it joins the Jackson to form the headwaters of the James, one of Virginia's best known public waterways.

In any event, we thoroughly enjoyed that bright summer day deep in rugged Allegheny Mountains.

Our quarry, however, was the scrappy smallmouth bass that fins the Cowpasture's clear waters. Thumbing through the local newspaper by the campfire the evening before I had come across a story of a 5-pounder the river had just given up. So our hopes were high as we slid the boat down the banks of the river and loaded our tackle.

But smallmouth bass can be uncooperative at times — and they were that day. Except for a couple of small ones, none showed an interest in the great variety of lures we threw at them.

The fishing was good, however, and we didn't lack for action — thanks to a scrappy cousin of the smallmouth. Rock bass seemed to be on a feeding spree that distant summer day, and we learned a lot about fishing for the little fish, better known as redeye or goggle-eye to many anglers.

Biologically known as *Ambloplites rupestris*, the rock bass is one of over a dozen or so members of the big sunfish family, of which the better known members are the bluegill, crappie, and largemouth and smallmouth bass. In most field guides it is described as a fish with a robust body, dark, uneven markings, red eyes, and six spines in the anal fin. Its color is close to dark olive, sometimes with a bronze tone and splashed with blotches of brown and brass.

The warmouth, a sunfish of the slower waters of eastern Virginia, also has red eyes and is also often called redeye or goggle-eye. Range and habitat requirements usually separate the fish, however.

The average Virginia rock bass will weigh a half pound or less, though the fish grow to 2 or 3 pounds. A pair of 3-pounders are tied for the world record. One came from Sugar Creek in Indiana in 1969, and the other from York River in Ontario, Canada in

1974. Virnett Robinson's 2-pound, 5-ounce Virginia record is not far behind the world record. It came from the Nottoway River in 1974 and bested a 2-pound, 2-ounce Pigg River rock bass that had held the record since 1964.

A 2-pound New River rock bass was top fish in Old Dominion waters last year, but Goose Creek, North Otter Creek, and the Nottoway River also gave up citation fish. A 1-pound rock bass will earn a citation in Virginia.

"They seem to like rocky areas," observed my fishing partner on that Cowpasture trip as he strung another stubby fish.

The field guides describe the rock bass's preferred habitat as clear, rather cool water, rocky or gravel bottoms, and a jumble of boulders and stones. That is where I have found most rock bass in Virginia and in other waters I have fished. The Cowpasture, Holston, Jackson, and the big New River are good examples of ideal rock bass water.

It wasn't long after that Cowpasture river trip that I enjoyed another session with rock bass, this time on the South Fork of the Holston River.

The rock bass also lives in the Great Lakes and other smaller lakes within its range, but in the Old Dominion it is primarily a fish of the fast-flowing streams.

The original range of the rock bass was Manitoba in Canada and the Great Lakes Region south to the Gulf of Mexico west of the Allegheny Mountains. It is particularly abundant in the Great Lakes and the small lakes and streams of the upper Mississippi Valley.

The little sunfish has been widely introduced. That possibly explains its presence in the upper Rappahannock River, a stream that springs from the eastern slopes of the Blue Ridge Mountains, and the Shenandoah and Nottoway Rivers, all streams that flow east of the Allegheny Mountains. But these are typical rock bass waters — rocky streams that flow rapidly and are clear much of the year.

The fish is often found in trout streams also, and many a trout fisherman has been startled by the solid strike of a redeye smacking his spinner or other lure. In trout streams, however, the rock bass tend to congregate in small deep holes. I used to take them fairly regularly in Crab Run, once a public trout stream that flows alongside U.S. 250 in Highland County. It is now posted, however.

Like the smallmouth bass with which it shares most Virginia waters, the rock bass is a predatory fish, feeding on crayfish, minnows and other small fish, and insect larvae. Its feeding habits make it a fine quarry for the spinning angler and small artificial lures. Over the years I have taken the spunky fish on just about every artificial lure imaginable. Spinner-fly combination lures such as the Mepps, Shyster, Roostertail, and Panther/Martin are productive. They cast well and can be tossed into tight spots between rocks and boulders, above and below boulders, and into just about every conceivable kind of rock bass cover.

Small spoons and wobblers are also good.

In the usually clear waters in which the fish live,

lures of subdued colors are the best choice. Too much flash may scare the fish.

Ultralight spinning tackle and thin 2-pound test monofilament lines will increase the angler's chance of success. The thin line is inconspicuous and the light lures are easy to cast on it.

While my introduction to rock bass was from the seat of a cartop boat, I like to wade for the fish when the water is shallow enough. It often is. The wading angler is less conspicuous in the clear water, and he can move more cautiously — and cover the water more thoroughly. During warm weather old tennis shoes and trousers will serve fine, but in the spring and fall the angler will enjoy the comfort of waders or hip boots.

I have caught rock bass on the first day of trout season, and March and April produce many citation fish. May and June are prime months for the sunfish with the red eyes, however, and it is a delightful time to fish the fast streams. The summer months are also good, and more comfortable for wading. Both world records came during the summer months. But the fall is also a good time for rock bass.

In the pan the rock bass is a cut below the bluegill in my opinion, but taken from the clean, cold water of a fast stream the fish can be tasty. I like to fillet my catch.

Few Old Dominion anglers get very excited about rock bass. I seldom sense much enthusiasm when the fish enters a conversation. I suspect most rock bass are taken by anglers in pursuit of smallmouth bass — as my friend and I were that warm day on the Cowpasture River.

In some quarters the fish is considered a pest. Fishing guides, particularly, dislike the rock bass.

My wife and I were fishing the Saint Lawrence River with Norm Seymour a few years ago, and enjoying good success with northern pike, smallmouth bass, and yellow perch.

When we went ashore for lunch I took along my ultralight spinning tackle to work the rocky shoreline. The water was loaded with rock bass — plump, scrappy little fish that hit hard and fought harder. Yellow perch were also abundant, but only occasionally did I get one. The rock bass seemed to always beat the perch to my lure.

I caught a half dozen before Norm announced that lunch was ready, but he was not impressed with my catch.

"Trash fish," he mumbled.

When I pressed the subject he said the rock bass fed heavily on smallmouth bass spawn — and the smallmouth and the muskie are the stars of the Saint Lawrence River.

Still, the New York Division of Fish and Wildlife is trying to interest its anglers in the little rock bass, a fish abundant in the clear, cold waters of the state.

If I ever move to New York State I will not need that kind of education — for I learned about the spunky little bass years ago on the Cowpasture River. I have admired the redeye, goggle-eye or whatever you want to call it, ever since.

It Appears to Me

By Curly

...A PERSON OUGHT TO HAVE ONE

Believe it or not, the General Accounting Office in Washington has produced a free publication...if for no other reason, a body ought to request it as a "keepsake," but seriously, it is a valuable piece and should be a part of your library. The report is titled *To Protect Tomorrow's Food Supply, Soil Conservation Needs Priority Attention*. To order it, write to U.S. Government Accounting Office, Washington D.C. 20548 for Number CED-77-30.

If recycling or resource recovery is your bag, it is just possible that a recent publication by the U.S. Environmental Protection Agency is something that you should consider requesting...it's free. Ask for *Resource Conservation and Recovery? Current Reports* from Publications Clerk, Mail Stop 541, Environmental Protection Agency, 1200 Sixth Aven., Seattle, Washington 98101.

Along similar lines the Government Printing Office has a booklet which was produced by the U.S. Department of Commerce, Economic Development Administration which is called *Front End Recycling*. If you are interested drop a line to Superintendent of Documents, Government Printing Office, Washington D.C. 20402 requesting publication No. 1977/240-848/254.

Once again those folks down at the Tennessee Valley Authority have come up with what amounts to a basket of goodies, especially if you or someone that you know, is a canoeing enthusiast. The TVA in cooperation with the Chota Canoe Club and the East Tennessee Whitewater Club have published the following which are available on request: *Little Tennessee Valley Canoe Trails*, *Elk River Canoe Trails* and *Obed-Emory Canoe Trails*. If you



are interested, request them from TVA Canoe Trails, 301 West Cumberland Avenue, Knoxville, Tennessee 37902.

In a related item, the Tennessee Valley Authority has arranged for a 24-hour telephone number which features information of interest to persons planning to use the Little Tennessee River below the Dam at Chilhowie. By calling the following number, information pertaining to stream flow and water releases at the dam is available. Calling 615/546-0475 will provide the requestor with the information (by 6 P.M.) Monday—Thursday for the following day. Information about the weekend is currently available by Friday at 2 P.M.

...FOR YOUR BOOK SHELF

Maps have held a great deal of fascination for me as long as I can remember. I am not certain just when this life-long love affair with parchments bearing squiggly lines and exotic names began. It could have been when I first read *Treasure Island* and I learned about buried silver and jewels and pirate maps and such as that. Then again it could have been when I discovered the writings of Lewis and Clark and traced their explorations. Perhaps it was when I read with absolute breathlessness, the descriptions of Spanish gold hidden by early conquistadores or let my imagination run wild at the thought of the Lost Dutchman Mine in Arizona's Superstition Mountains.

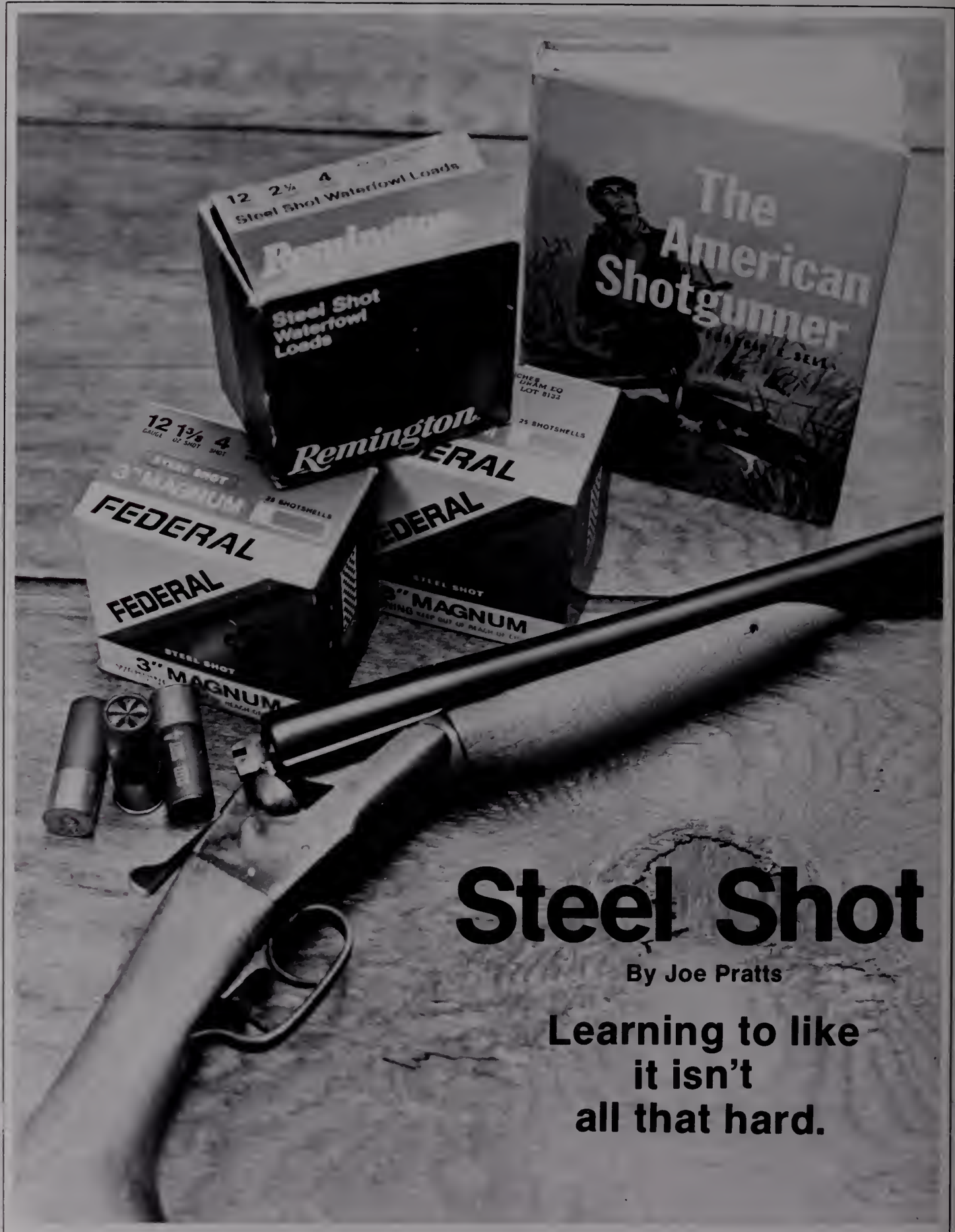
Well, no matter, really, for the fascination remains, and judging from people I have chatted with, I am not alone in that regard. That brings me to the place where I want to tell you about an absolutely, jim-dandy new book which has been published by the Geological Survey. They call it *Maps for America ...Cartographic Products of the U.S. Geological Survey and Others*.

This hardback is 265 pages of information which they claim is "almost everything you wanted to know about maps." It covers the early history in the United States clean up to what they predict about the future in cartographic development. The more than 200 illustrations which are done in full color highlight the book which was prepared in conjunction with the Survey's Centennial celebration.

The purchase price is not in the Dime Store Bracket, but I don't know much that is these days. For \$11.00 you have an opportunity to get some real quality either for yourself or for someone that you really hanker to please more than somewhat. Besides just being a real nice thoughtful gift for any time, don't forget that Christmas is near upon us already. Copies are available for the price listed above from the Branch of Distribution, U.S. Geological Survey, 1200 South Eads St., Arlington, Virginia 22202. Orders must include check or money order which is payable to the U.S. Geological Survey.

....AND THEN

As the years pile up on a fella, I reckon that it is only natural to reflect on what has gone before, how it might have been different and to cogitate about some unanswered questions which have cropped up along the way. One of the things that I have always wondered about is, just why hot water sounds different than cold when it comes through a pipe...interesting!



Steel Shot

By Joe Pratts

Learning to like
it isn't
all that hard.

Photo by Susan K. Smith

If you are one of the many waterfowl hunters who guns Back Bay on Virginia's east coast or that section of the Chickahominy River designated as a steel shot area, then you have some decisions to make for this coming season. What sizes and loads of steel shot will be available, and which will do the best job under your particular set of circumstances?

As of the 1979-1980 waterfowl season, all gauges of shotguns will be required to use steel shot only in these designated waters. In the past, only ten and twelve gauge guns were restricted to the use of steel but now, with the law in effect in the four major flyways across the United States, all gauges will have to comply with the law.

The first obstacles that most hunters will have to overcome are the varied and widespread rumors concerning steel shot. The major arms manufacturers are now confident that modern single barrel guns and steel loads are compatible. Notice, I said single barrel guns. Many of the older double barrel side by sides and over and unders could be damaged through barrel separation from one another, or choke deformities at the muzzle. Check the ammunition boxes for details concerning older guns. If you use a newer single barrel shotgun, you will not experience any problems. All of the major ammunition companies use extra heavy shot protectors in their shells to protect both the shotgun barrel and the shot column.

During the first season that steel was required, I heard many stories about how "Old George fired two boxes of that junk opening day and the birds just shook it out of their feathers and kept on going!" Well, let's get the facts straight. Very few hunters outside of the designated areas have used steel shot and there are differences. Steel shot loads available to the hunter today will tend to shoot tighter patterns than comparable loads with lead shot. Steel pellets do not compress during the firing stage in the barrel. This results in few deformed pellets and fewer fliers in the pattern. Because of this, some gunners may find their modified choke barrels delivering full choke patterns. Some experimentation would be worthwhile if you need an open choked gun.

Most hunters assume that if they have been using number four shot in lead, they should switch to number four in steel also. That reasoning may prove valid but there are circumstances that may dictate a larger size shot, also. I gun a deep water blind on Back Bay and tight shots on ducks and geese are the exception rather than the rule. During that first steel shot season my companions and I used number four shot successfully on decoying ducks but like "Old George" we were less than satisfied with our results on those shots at 40 to 45 yards. After that first season I did some research on shot counts and came up with the following information. We had been using the one and one eighth ounce load of number four steel with a pellet count of two hundred and thirteen. Incidentally, that count exceeds the lead one and one eighth load by sixty

two pellets. The load packed a lot of pellets, but at 40 to 45 yards they lacked the necessary striking force needed for a clean kill. We were often forced to shoot our ducks several times at those longer ranges to bring them down. Since we needed a load with more striking power, a switch to number two shot seemed logical. Number two steel has a pellet count of one hundred and forty in the one and one eighth ounce load as compared to ninety eight for lead. This load combined with a full choke gun proved to be very effective at the longer ranges. I can honestly say that I see little difference in performance between the lead and steel loads up to forty five yards.

When switching from number two or four lead shot to number two or four steel, you will increase your pellet count by thirty percent. This increased pattern density combined with the higher muzzle velocities of steel loads greatly compensates for the lower striking force of the individual pellets.

The decoy hunter or jump shooter on small streams or potholes where shots will be close will probably find number four steel to his liking and may choose a more open choked gun to compensate for the tighter patterns. Beyond forty yards and for large ducks such as mallards and blacks, number two steel is superior. After you exceed 45 yards, you had best shoot a magnum twelve with one and one half ounces of twos. Personally, I have not tested the magnums, but as with lead, large shot would be mandatory for long range kills. My experience with geese has been limited to a few snows and Canadas but large shot is necessary and a size B.B. and number one is loaded for this purpose. At moderate ranges it is effective, but from the information I have heard the best effective long range load for geese at present is size B.B.

Changes are coming rapidly as more and more areas are requiring steel and the ammunition companies are upgrading their shells as they gain more knowledge.

At present, loads for the twelve gauge are available in number four, two, one and B.B. pellet sizes, and in one and one eighth and one and one quarter ounce loads for the two and three quarter inch shell and one and three eighths and one half ounce loads for the three inch shell. I would like to see number six shot loaded for use on cripples. With the increased pellet count of steel it would closely match the performance of the lead seven and one halves we use now.

Until shot reserves are built up and loads developed, the reloader is out of business as far as steel goes.

Prices? higher than lead to be sure, but the added cost per shell is small when compared to your total outlay for guns, decoys, boats and motors, and related equipment.

Let's face it, steel shot is the law and we are going to have to live with it. Pattern your gun and develop a combination that will work for you and then spread the word. There are still a lot of "Old Georges" around.

Exploring the Eerie Depths

**There's plenty for spelunkers to see
in Virginia's sometimes frightening...
but always beautiful...caves.**

Article and photos by Gary R. Gaston



Ask a caver what attracts him to this unique sport and you're likely to get a variety of answers.

Maybe it's the chance of finding Indian relics or blind fish, even though both are rare. Maybe it is simply an adventure-seeking plunge, the excitement of crawling over perilous ledges and surviving.

Or maybe it's the solitude found deep beneath the earth's surface where the only sounds are water dripping into pools or the roar of an occasional thundering waterfall.

There's plenty to see. Though cave-dependent species are rare, many animals regularly find their way into and out of caves: bats, centipedes, beetles, salamanders, crickets and pack rats among them.

Food chains of above-ground ecosystems are founded on green plants and are, therefore, unknown to cave ecology. As a result, most all food must be imported. Floods bring in leaf litter and other organic debris and bat guano and droppings from other animals are an important source of food to many species. Bacteria and fungi aid in preparing food for consumption by concentrating loose organic matter — such as leaves — into a compact mass. Virtually everything organic deposited in caves is eventually utilized, making the cave an efficient ecosystem.

Most caves in Virginia were formed in limestone, rock made up of organic remains, such as shells of mollusks and coral reefs. Because of their limestone origin, many caves are veritable walls of fossils.

Most cave decorations are composed of calcite, aragonite or gypsum. These calcite and aragonite formations may be shaped into stalactites, stalagmites, helictites, anthodites, flowstone, rimstone soda straws, columns or bacon strips. Less frequently, gypsum needles and gypsum flowers may be found.

Fortunately, due to their inaccessibility, most of Virginia's 2,300 reported caves have remained relatively intact. With spelunking or sport caving on the increase, however, cavers need to be aware of the critical importance of leaving the cave as they found it. The effects of vandalism are staggering, considering that it takes 100 years per cubic inch of growth for a broken stalactite to return to its original form. The caver's conscience should be further strengthened by the new state law that makes it illegal to remove anything, living or dead, from caves in Virginia.

Before venturing into their first cave, the novice spelunker needs to be prepared, both physically and psychologically. Though serious accidents are uncommon, they do occur — so proper forethought is essential. A carbide or electric lamp as the primary light source and at least two additional independent emergency light sources are necessary. Each caver should wear a hardhat with, preferably, his light attached as this frees the hands during climbing. As most caves average about 55°, warm clothing is essential. Hiking boots should also be considered as a necessary part of the equipment for the potential spelunker.

Common sense rules that apply to other forms of outdoor recreation are critical to spelunking, as well. Never enter a cave alone — the buddy system



The cave is a unique environment that requires the caver to be both physically and psychologically prepared.

or team caving is the only safe method, with each team member making sure they could find their way out independently in the event of an emergency. Before entering a cave, be sure to leave specific information as to where you plan to go spelunking and when you expect to return. Also, obtain permission from any landowners whose property you must cross to obtain access to a cave.

Finally, anyone considering spelunking should possess a healthy respect for cave ecology. Hibernating species awakened from their sleep — especially bats — may die due to increased metabolic requirements and inadequate food. Part of the joy of caving involves watching these creatures and studying their habits — but without disturbing them.

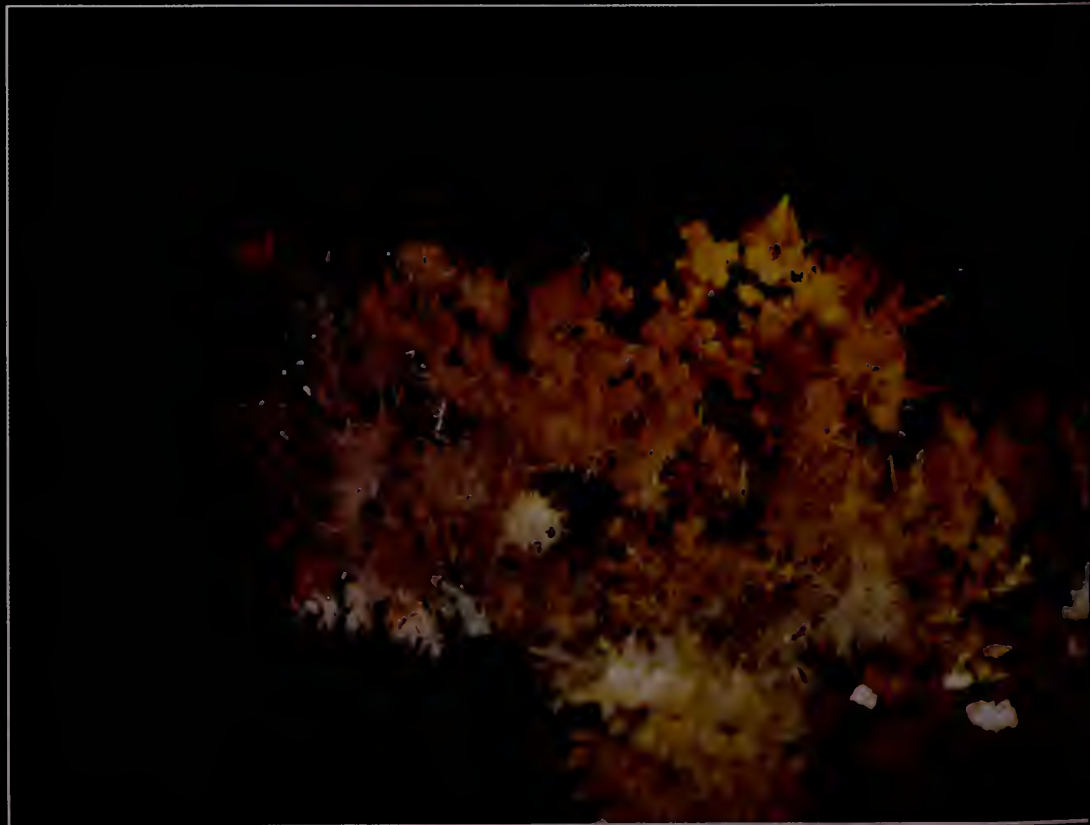
Caves are a unique and beautiful world beneath the surface. Appreciate them and leave them untouched for future generations.

Information about spelunking is available from:
 The National Speleological Society, Cape Avenue,
 Huntsville, Alabama 35810.





Stalactites and stalagmites (above), a little brown bat (inset) and shimmering calcite crystals are part of the cave's underground world.





**Creatures seldom
seen, such as bats
and salamanders,
can be found in
the dark depths
of caves.**

The big-eared bat (above) is an endangered species found in four Virginia caves.



This hibernating little brown bat is covered in condensation.



The slimy salamander, seldom seen above-ground, is a resident of caves in our state.

A black and white photograph of a person wearing an orange safety vest, walking away from the camera down a path through a wooded area. The trees are bare, suggesting late autumn or winter. The path is covered with fallen leaves and branches.

Are You A

By Capt. James N. Kerrick and
Dr. Peter Bromley

Anyone who drives year after year without accident is a defensive driver. This driver knows his capabilities, the limitations of his car under different road conditions, and he prepares for unexpected and dangerous actions by being alert to changes in road conditions and to erratic actions by other drivers. The driver with a good safety record saves money on insurance premiums. Significantly, insurance firms also give rate reductions to the new driver who successfully completes a driver education course. Thousands and, perhaps, hundred of thousands of tragedies are avoided each year because of defensive driving and driver education. Doesn't it make sense to apply defensive thinking to other potentially dangerous activities, including hunting? If you want to be a safer hunter, we believe this analysis of hunting accidents in Virginia between July 1961 to June 1977 will interest you.

How dangerous is hunting? Over the 16 years, game wardens reported 972 hunting casualties. Over the same period there were 6,771,253 licenses sold. The accident rate over the 16 years was 14 accidents for each 100,000 licenses sold, a rate which is considerably lower than the automobile accident rate per licensed driver. People spend more time driving than they do hunting, so direct comparison of these statistics is somewhat misleading. Statistics from the National Safety Council show that risk of injury exists for virtually everything we do, from climbing in and out of bath tubs to scaling mountains.

Hunting casualties are reported by Virginia game wardens who interview the shooter and victim. Between July 1, 1961 and June 30, 1977, Virginia wardens completed 972 Uniform Hunter Casualty Reports on forms designed by the National Rifle Association. These reports are studied carefully to determine the causes of accidents and to direct the hunter safety program toward increased effectiveness. With sixteen years of records in hand, it was decided to subject the data to statistical review. The School of Forestry and Wildlife Resources at Virginia Polytechnic Institute and State University cooperated. Each accident report was reduced to a single computer card and a series of computer programs was written by Dr. Richard G. Oderwald, Assistant Professor of Forest Biometrics. The detailed report will be published soon in the Proceedings of 32nd Southeastern Association of Fisheries and Wildlife Agencies Annual Conference.

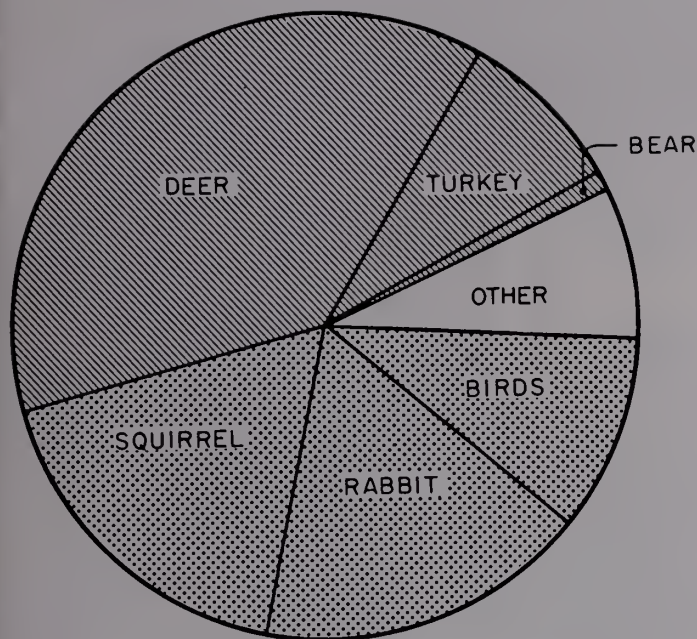
CAUSES OF HUNTING ACCIDENTS

Errors in judgement caused 49 percent of the 972 reported hunting accidents. Victims were mistaken for game animals or birds in 194 instances. How many of these tragedies could have been prevented if the victims had been wearing blaze orange hunting clothing is not known, but we suspect a marked decrease in risk would result. Victims were out of sight of shooters in 136 instances. In other words, the trajectory of the bullet or shot beyond the target animal was not considered adequately by shooters. Similarly, in 99 accidents, victims were shot when shooters fired at moving game that passed between the shooter and victim. Also, in 46 instances victims moved into the line of fire. Many, but not all, of these accidents could have been prevented if the shooters heeded the cardinal rule of hunting: *Be sure of your target before you shoot.*

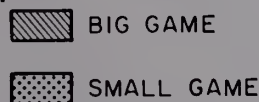
Separate from judgement in the act of shooting are three other categories of causes. Shortcomings in the skills of hunting accounted for 22 percent of the accidents. Shooters stumbled, fell and their firearms discharged injuring themselves or their companions 99 times in the 16 years. One wonders how many of these shooters had proper footwear or had spent days before the

Defensive Hunter?

VIRGINIA WILDLIFE



Accidents by Type of Game



season scouting the woods and getting into good condition. How many had learned how to handle a firearm during a fall? In 61 other accidents, the trigger caught on an object, causing unexpected discharge of the firearm. The safe hunter guards the trigger, keeps the safety on, and points the firearm in a safe direction. Twenty-nine accidents occurred during loading and unloading firearms. These were due both to lack of skill and to unsafe barrel direction. The third category of causes is violation of safety rules and laws. The unsafe acts of removing or replacing loaded firearms from vehicles and riding with loaded firearms were responsible for 61 accidents. Loaded firearms fell from insecure rests, causing 29 casualties. Crossing obstacles, such as barbed wire fences, with loaded firearms resulted in 27 injuries. Horseplay with loaded firearms caused 21 accidents. Clubbing cover or game with firearms caused 11 tragedies. By avoiding these violations of safety rules the safe hunter can reduce his probability of causing an accident by 15 percent. Only 29 accidents over the 16 years could be traced to mechanical failures of firearms. Even here, we believe the safe hunter will be so familiar with the normal operation of his firearm that he will take corrective action at the slightest sign of malfunction. About 10 percent of hunting accidents were due to either unusual or unknown causes and were not analyzed.

Our review of the causes of hunting accidents provides substantial evidence that (1) conscientious attention to target identification and background safety before shooting, (2) development of the skills both in moving in the field with firearms and in handling firearms, and (3) commitment to legal, safe handling of firearms will greatly reduce the risk of hunting.

TYPE OF GAME

What are the risks involved in hunting the different kinds of game in Virginia? A national survey conducted by the U.S. Fish and Wildlife Service indicated that in 28 percent of all days spent hunting in 1975 in Virginia the hunters sought deer, bear or turkey. However 47 percent of 955 accidents happened while

hunting big game. It is no surprise that deer hunting, which accounted for 357 accidents, is the most risky. The combined total for small game was almost as great as for big game, suggesting that safety should be very much on the mind of the small game hunter and particularly on the parent who permits his youngster to hunt squirrel, rabbit, quail or woodchuck without insisting that a hunter safety training course be completed by that young hunter.

AGE, EXPERIENCE AND SEX

As we get older and more experienced, are we safer? The statistics say yes, but the numbers are not very comforting. Most accidents were caused by shooters under 25, however significant number of accidents were caused by hunters in their 30's, 40's and 50's. Hunters with less than 5 years experience caused 45 percent of all accidents. But, the average experience of shooters who did not complete hunter education was 13 years. What should these statistics mean to the defensive hunter? We believe young hunters should have the hunter training course. However, we also believe that every hunter, young or old, greenhorn or experienced, should pause before and during each hunt to consider safety.

TIME OF DAY AND TYPE OF COVER

Is it more risky to be in the field at dawn or dusk than during daylight hours? The answer may amaze you. Hunting accidents were about four times more frequent during broad daylight than during dawn or dusk. Furthermore, the rates were about the same for morning, mid-day and afternoon. Not only should the defensive hunter be alert throughout the day, but he should also be informed that accidents occur in all cover types. Of 410 accidents, 160 happened in dense woods or brush, 176 in light woods and 74 in open fields. A hunting tragedy can occur whenever and wherever hunting takes place.

COLOR OF HUNTING CLOTHES

Under poor light conditions, such as those associated with rain, fog, snow, dawn or dusk and when in darkness, hunters who wore bright clothes were injured five times less frequently than hunters who did not wear bright clothes. Deer hunters frequently enter and leave the field in darkness and they often hunt under reduced visibility conditions. The Virginia hunter safety course rightly emphasizes the use of blaze orange clothing. Blaze orange will not guarantee your safety, but 16 years of accident reports suggest a significant decrease in your risk when you wear blaze orange.

HUNTER EDUCATION

Does hunter education work? By 1977, 192,000 Virginians had completed a certified hunter training course. We could not determine if the trained hunter was less likely to be involved in a hunting accident than untrained hunters due to a lack of information on the hunting population each year. However, we could analyze the causes of accidents caused by trained and untrained hunters. Untrained hunters caused 304 of 622 accidents (49 percent) because of judgement errors, whereas trained hunters committed judgement errors in 25 of 69 accidents (36 percent). The proportions are significantly different: *The Trained Hunter is a Safer Hunter*.

We sincerely believe that if the full data were available, the success of the Virginia hunter education program would be even more pronounced. The course is under continuous review and new materials and methods of instruction are added virtually every year. The entire game warden force is committed to reducing hunting tragedies through education. The wardens and a team of 700 specially trained and registered volunteer instructors will present the six hour course to any group of 15 or more people. For information on a course in your area and on becoming an instructor, contact your local game warden. Young and old alike will sharpen their knowledge of the risks and become safer hunters by taking this short, but intensive, course.

Personalities

By Francis N. Satterlee

Richard T. Spain Commissioner, Fourth Congressional District

It was in the tiny community of Homeville, not far from Wakefield in Sussex County, that Dick Spain was born and did most of his growing up. When he was but four years old, his father died, leaving his mother with the responsibility of raising the family alone. Times were very hard, everyone pitched in to help and even the farm on which they lived had to be sharecropped to provide some extra income.

As he matured, Dick spent more and more time in the woods learning about nature and wildlife. He hunted, fished, trapped and found solace in the solitude that the outdoors provided. During the summers when school was out, he worked for a road contractor doing all manner of jobs from waterboy to flagman and truck driving.

During the early 1940's he had managed to save enough money to realize an ambition of long standing...he took flying lessons and subsequently was awarded a Private Pilot's license. In 1944 he enlisted in the U.S. Naval Air Corps. Following training at Sampson, New York and Banana River, Florida, he was graduated as a Flight Engineer qualified by both the PBY and PBM aircraft operated by the Navy. He then joined a squadron based at Natal, Brazil in South America and for about twelve months, participated in anti-submarine patrol flights in that area of the globe.

After receiving his discharge from the U.S. Navy he returned to the 160-acre farm near Homeville. He soon realized that he needed a change and got involved in a land clearing and bulldozer operation. One of the largest operations in which his corporation became involved was the clearing of the land for what is now Lake Gaston. This involved the preparation of some 20,000 acres. In addition to the land clearing operation, Spain also became involved with and operated a saw milling and lumber operation. This evolved from his learning of a revolutionary milling operation in Canada. He visited the mill near Vancouver, B.C., determined that it would be applicable in Virginia, purchased a machine and built a mill in Wakefield. During 1974 he merged what by then had become a very successful operation with Continental Can Corporation and began to devote more of his time to the supervision of the cattle, hog and peanut farming operations on the approximately 5,000 acres of land which he now owns. He is also spending a bit more time of late in the piscatorial art, both the salt and fresh water variety, hunting and in his continuing love affair with the outdoors.



In June 1979 Governor John N. Dalton appointed Mr. Spain as Commissioner representing the Fourth Congressional District on the Commission of Game and Inland Fisheries. In this capacity Dick is hopeful that he can represent the sportsmen and women of that District in a manner befitting the trust placed in him by the Governor. He welcomes this challenge and is extremely proud to have been chosen for this responsibility.

Mrs. Spain is the former Lucy Muriel Whitehurst from South Mills, North Carolina. The couple makes their home on Route 35 near Waverly, and closely adjacent to the community of Homeville where, in years past, it all began for Dick.

The couple has two sons, Richard T. Spain, III a teacher with the Chesterfield County School system and Michael W. Spain who is carrying on the family farming operation in Sussex County.

Growing Up Outdoors

By Sandy Coleman

ILLUSTRATION BY DICK BERNARD

The bobbing tail of the cottontail rabbit is a favorite sight in the outdoors to many of us. He is a beloved member of the American rodent family.

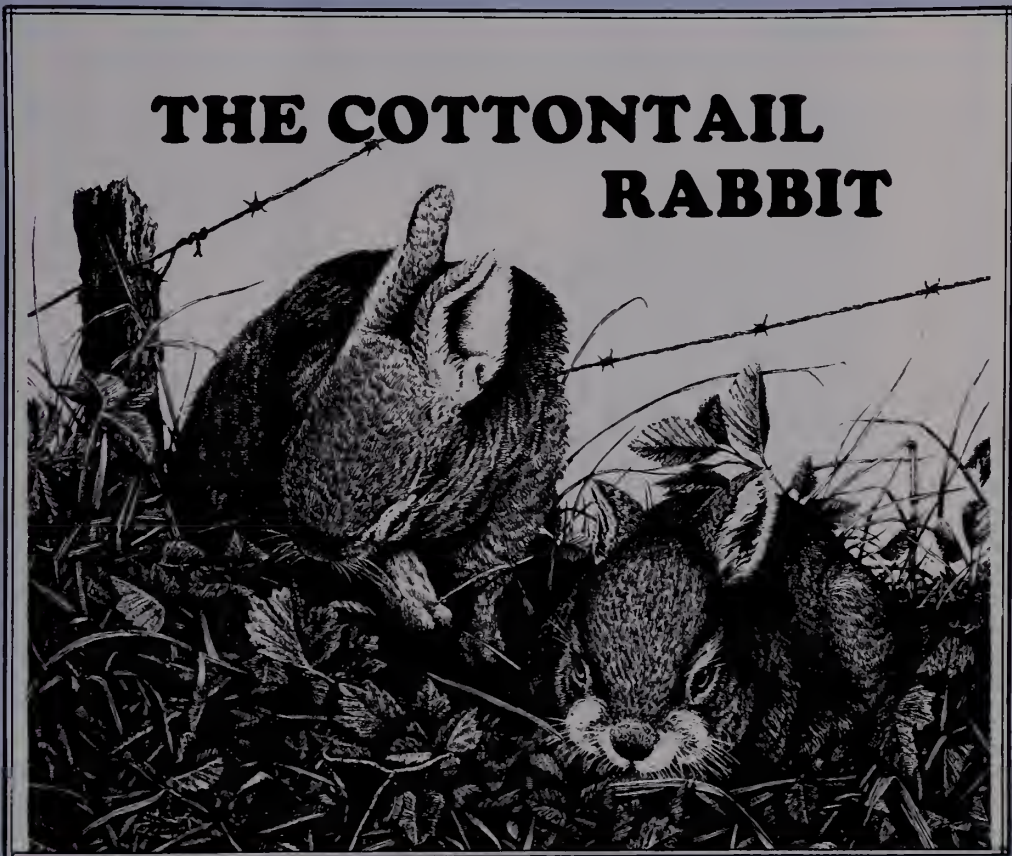
He is a small animal, covered in brown fur that shades to white on the underside. He has large ears and eyes, out-sized hind feet and a powerful backside. His trademark is the familiar, fluffy "cotton tail."

The rabbit has a tough job to survive. Almost every predator hunts for the cottontail, as well as man. Because of the rabbit's tough natural defenses, as well as the help of man, the rabbit's bobbing tail is still a familiar sight to those who spend time in the outdoors.

One of the advantages of his very large ears is the fact that they are adjustable and can be positioned so that the rabbit can hear the slightest noise. This is an invaluable asset in protecting himself from his natural predators. His big eyes are located on the side of his head so that he can see to the front, the sides and behind.

His well-developed hind legs and back muscles make him hard to catch when he is running at top speed. Reportedly, a rabbit can jump 15 feet when frightened. The phrase, "Running like a scared rabbit" has much basis in fact.

Cottontails spend much of their lives on a small space of land, many times as small as one acre. He learns every burrow and trail of his small territory.



Rabbits are also known for their large birth rate. And it is true. A female can raise several litters of young every year. The rabbit's nest is several inches deep and covered with dried grasses, leaves or moss. The female rabbit adds bits of fur from her body and adds it to make the nest very soft for the young. The size of the average litter varies — anywhere from one to eight is normal!

The young grow swiftly. Their eyes open within a week and the nestlings are often strong enough to leave the nest at two weeks.

Cottontail rabbits eat just

about anything. Almost any plant that grows above ground is part of his diet. Among the rabbit's diet are: fruits, grasses, branch tips, buds and barks.

When the rabbit first begins to leave the nest, many well-meaning individuals find the tiny rabbits and feel that they have been abandoned by their mother. This is not the case. The rabbit is simply learning to make his way in the world. A rabbit at this age is very difficult for humans to raise. So, if you find a young rabbit — leave it alone! The mother is most likely nearby waiting for you to leave.

I Keep Hoping

An unsuccessful bowhunting trip
can dampen just about
anybody's enthusiasm!

By Bill Thomas

After two frustrating years of hunting with a high powered rifle, I decided it was time for a change. My hunting buddy Jim Banton had taken me to prime deer areas, loaned me a rifle, a portable deer stand and showed me every deer sign imaginable (*White Tailed Safari, Virginia Wildlife*, January 1977). I have not been able to get in the woods on opening week, so even with all of this help I have only had one shot at 100 yards in 15 days of hunting. I knew I had to be in the woods before regular season if I were going to have an easier time finding a cooperative deer.

This summer I made a change and bought a fifty-five pound compound bow from Jim. He used the bow the last few seasons with success. I couldn't wait to get ready for the season from the moment I saw the bow. I had hunted with — or rather carried — a bow as a boy every warm day of the year, but my old twenty-five pound long bow wasn't in the same class as this compound bow. It had pulleys at each end that engage when the string is pulled half way back. This reduced the pulling power from fifty-five to thirty-five pounds on my bow. At this reduced strength I could hold the string back long enough to sight in the target and have a steady release.

A few days later I started getting ready for the early October season. The first things I needed were a leather glove, leather arm guard, quiver, a small knapsack, and arrows. I bought the arrows with field and hunting points and glove that day. For the quiver, arm guard and knapsack I decided to be resourceful. Using a deerskin of Jim's I had tanned the previous winter, I started measuring and cutting it for the leather goods. The skin had been tanned with tannic acid from acorns

and oak bark. (I removed the hair by soaking it in wood ashes and water.) To soften it enough to work with, I tried oiling, sanding, and jumping on it — but to no avail. Large items like the quiver and sack were all it was good for. With these deer skin items for the trip, I thought I could fool any deer.

The second reason bow hunting would be easier for me, I hoped, was that it solved my biggest problem in hunting during rifle season — freezing in a tree and afraid to move. The warm weather during bow season would be welcome. I practiced enough to feel confident from twenty to thirty yards from the target. This was a much shorter range than with a rifle, but I didn't mind. I had hunted for more than two weeks the last few years, but hadn't fired more than one shot. I asked myself what the difference was if I sat in a tree in the cold weather with a range of 100 yards or stood in a tree in the warm weather with a range of thirty, if I don't get a shot anyway.

I packed my gear and left Fairfax County for Albemarle and Nelson Counties. Three hours later I found Jim skinning a deer he had shot earlier with his bow. I pitched in and we skinned, quartered and refrigerated it. In mild weather it is important to get the meat in the refrigerator fast. I asked about every detail of the planning, waiting, aiming and shooting of the deer. He, of course, was glad to tell me every occurrence. We decided the most important thing was having your tree stand in the right place at the right time. I couldn't wait until dawn the next day to be in that place. I knew the shot wouldn't be easy — but oh did I want the shot!

We drove to the large farm that had become our favorite hunting spot and took out our bows. On the



The frustrations facing the bow hunter are much the same as those of other hunters.

way to the school bus, Jim's cousin had just spotted a buck on the dark road, so off we went. We found fresh scats and a nice trail. I climbed a tree near the trail and began my wait. I hardly moved a muscle all morning, but the deer did not show. Jim did see a buck and doe seventy yards away from his position, but they were well out of bow range. The trip was just beginning, though.

That afternoon we visited another cousin's apple orchard where he showed us saplings that deer had ruined. It seemed the deer had been causing much damage the last few years and several had been shot on orchards in the area. He was, therefore, happy to see us hunting and wished us luck. I scouted the area and stationed myself near several deer trails leading from the woods to the apple trees. I laid on the nice grass, ate a few apples, and enjoyed the weather for a few hours while waiting for what I knew would be a sure thing. Again, I was wrong as not one deer passed by.

Most hunters don't kill a deer every year, but at least they must see one. I had hoped that before rifle season opened the deer would not be so wary. We saw enough signs that day and the next to know they were around. I couldn't help deciding that deer don't just get smart when they hear gunshots, they are smart all year. I even hunted the same spot where Jim killed his deer a few days earlier, and the deer out-foxed (or should I say out-deered) me. I know my time must be near, so I am still trying. I made a portable deer stand and have hunted three days in a spot near my home where the owners will allow bow hunting. I keep hoping.



Gourmet Game

Part I: Cooking October's Game Birds

By Joan Cone

October brings woodcock season. And even though railbirds are legal game earlier, it's with the arrival of clear, cool, fall days that hunting them in the yellowing marsh grass can be enjoyed without a battle against biting insects.

All the various railbird species legal to shoot in Virginia are wonderful table fare. And so is the woodcock, who seems to be a shorebird that for some unknown reason has made the forest his home and earthworms his principle food.

The bag limits for railbirds, clapper, king, Virginia, and sora, are very generous, and the possession limit is large enough for at least a couple of meals. While the saying, "skinny as a rail" may partly apply to all of them, the fact they'd rather run than fly means well-developed and delicious legs.

Aside from the fact that clapper rails are in salt marshes, and king rails prefer fresh or brackish water, the two species are much alike. Sora and Virginia rails are much smaller and are found in fresh-water marshlands along the James, Pamunkey, Mattaponi, and other rivers.

Preparation for cooking is easy enough. Clappers are generally skinned, and the others usually plucked. Cut off wings of all railbirds and split them along the backbone to facilitate removing the lungs and cleaning them thoroughly. When freezing, wrap each rail carefully with a plastic wrapping product and then place your individually wrapped rails within good freezing bags.

Woodcock are best plucked and then split up the back for complete cleaning. They, too, should be wrapped separately just as with the various railbird species.

You'll find woodcock to be chunky birds comparable in weight and outline with a bobwhite quail. One amazing characteristic of these timber doodles is that the legs are white meat, and the breast meat is dark! But what can you expect from a shore bird which isn't? Very tasty, and appreciated even more in Europe than here, woodcock have another attribute. They are much easier to cook than they are to bring to bag.



Woodcock and rail make a princely feast.

Sauteed Clapper Rails or Woodcock

8 birds, split along back

Flour

Salt

4 tablespoons (½ stick) butter

¼ cup Madeira or sherry wine

Dust birds lightly in flour to which salt has been added. Melt butter in skillet and place birds, breast side down first. Cook about 8 to 10 minutes on this side and then turn and complete cooking about the same time being careful not to over cook. Remove birds to platter and add wine to drippings and serve over birds. Allow 2 birds per person.

Curried Clapper Rail

4 clapper rails, split down back

2 tablespoons butter

1 teaspoon instant minced onion

1 tablespoon flour

1 can (10¾ ounces) chicken broth

1 teaspoon curry powder

Salt to taste

Melt butter in skillet and brown birds breast side down first. Turn and brown on opposite side. Remove birds from skillet. To drippings in skillet, add instant minced onion and flour. Mix well and then gradually add chicken broth, stirring constantly. Add curry powder and salt. Return birds to skillet, cover, and simmer for 15 to 20 minutes or until tender. Allow 2 rails per person.



Woodcock in Skillet

4 to 6 woodcock
Salt and pepper
2 tablespoons flour
1 can (10½ ounces) consomme
Pinch of basil
¼ cup butter
1 bay leaf
½ cup rose or red wine

Split woodcock down back. Sprinkle birds with salt and pepper. Melt butter in skillet and brown birds slowly on both sides over medium heat. Sprinkle birds with flour, add remaining ingredients and cover skillet tightly. Simmer for 30 to 40 minutes or until woodcock are tender. Spoon skillet juices over woodcock when serving.



Woodcock, either baked or fried, makes a delicious and different meal, like other game birds.

Baked Woodcock

8 to 10 woodcock
Salt and pepper
Flour
¼ cup butter or margarine
1 small onion, minced
3 carrots, chopped
2 tablespoons fresh parsley, chopped
1 cup chicken broth or chicken bouillon
½ cup white or rose table wine

Preheat oven to 350° F. Split birds down the back, and add salt and pepper to flour before dusting birds lightly. Melt butter in heavy skillet and place birds within it breast side down. Saute, turning frequently until browned on both sides. Remove birds from skillet and place in a deep casserole. Pour drippings from skillet over birds and add onion, carrots, parsley, chicken broth and wine. Cover and bake for 45 minutes or until tender. Spoon the wine gravy over the birds when serving.

Roast Woodcock

Split the desired number of woodcock up the back and place them in a shallow baking pan. Place the pan in a preheated 400° F. oven and roast for 15 to 20 minutes. During roasting, baste several times with melted butter to which a small amount of red wine has been added. After roasting, salt and pepper birds and serve on toast. Allow 2 to 3 woodcock per person.





Early Duck Season

By Bob Hicks

It's too warm for duck hunting and the mosquitoes are busy and you're telling yourself that they really aren't going to fly today. You're shooting on opening day and there's no other beaver ponds, so that old who swears wood ducks will return to an evening area where they've been shot over there, was probably right. But, even if he's right, you had a great opening day there with friends and that four-day-old memory is still vivid...

R. S. WALTERS

There was considerable grumbling when the duck season was split to allow a five day early portion, supposedly to give Virginia hunters a chance at early migrants like blue-winged teal and wood ducks. It did make the late November decision between quail and ducks easier with the second and major part of the season coming the second week in December. But when your buddy shows you a real honest-to-God forty acre beaver pond tucked in the oak woods within .22 range of his farmhouse and a late afternoon visit finds wood ducks thicker than the mosquitoes, the idea of an early season begins to make sense.

A scouting trip into the flooded timber to determine resting spots and marker trees and likely stands reveal a paradise of sweet gum and oak and maple with a carpet of duck weed and pickeral weed and duck signs galore — and the fever begins to build. There is conversation and more conversation about the best choke and shot size and you've settled on improved cylinder in 20 gauge and #6 short magnums but 7-½'s would be as good. These birds aren't fully feathered yet and the shots will be close. We agree not to fire at any above the treetops on the first high pass. Besides, the acrobatics don't really get good until woodies start their unique dipping, side slipping, dart and stall descent through the timber . . .

The mosquitoes are getting more insistent and you wish that the cold weather forecast for tonight had come last night to slow them down but then that would've made the swamp water that's found the split in the left foot of your wader even more uncomfortable. You've settled yourself on a downed oak using the root mass as a combination silhouette break and backrest. The big gum marker tree with the nest hole that they flew to the first day is close and the field of fire is as good as this kind of shooting can have — which is marginal at best. Your two buddies are close enough to be heard (and seen) but strategically placed to intercept the birds fore and aft and flare them past the opening to your left.

You've been here about an hour now and the mental woolgathering that comes with the quiet and relaxation is broken by a softly-spoken warning from your host that the ducks should follow the small birds' activity shortly. Funny how sound carries across the water, especially a pond on a still evening.

And then they come. Four dark shadows, a hundred yards down the way, cutting toward your host who sees them and you know he does, and you get ready, too. But not soon enough. A hen crosses 25 yards in front, a flash between a maple and a gum and you're three

This hunter puts the skeptics' fears to rest.

feet behind and you're glad because you've agreed to try for drakes whenever possible. The shots, louder than life are roaring behind you, and your second good buddy is telling his Brittany to fetch and when you call to him, he says he's got two down and when you act surprised he makes a smart remark to the effect that only two came by and then you remind him that he's through for the day — a last verbal shot.

Out of the low timber, past your host, dart four more and this time you're up and catch them crossing in front of the big pine at a long 40 yards and the second drake drops like a stone. You smile, and your buddy hollers congratulations and then your "dead" duck darts behind fallen limbs. Not to worry, the Brittany has seen it fall and is coming and he fights the jackstraw of limbs and gets there when you do, even though he traveled five times the distance. No duck. But the telltale trail in the water plants shows where he's headed. (Irony in nature, the eaten becomes the betrayer.)

The Brit disappears in the shore brush and goes so far in you're scared he's found a deer track but now he's paralleling the shoreline back and forth. The time passes with the arrival of his puffing master who makes cracks about people who drop cripples — him with his limit in hand. You tell him to whistle up his dog, because it's late and besides he's fifty yards away from where the bird went in the bushes and here he comes with the drake, sort of sauntering with that "You-didn't-think-I'd-find-him-did-you" look. Much praise appropriately bestowed.

There are 15 minutes of legal shooting time left and your host is yelling for you to get below him where the big trees give way to smaller, thinner brush and the pickeral weed is thick, because that's where the birds are all going. You walk a hundred yards down the shallow edge and cut toward the spot past a last big marker tree and he's right — the ducks are pitching from every angle, squeaking and dipping.

The spectacle of it all is almost overwhelming. Six come in at tree-top level and while you're looking for another drake to limit out, two pair land 20 feet away behind a stump. They spot your movement but leave showing their tails and you refrain because that's a crippling shot in this stuff and you've already been through that once and besides there's only a couple of minutes of shooting time left.

The air is filled with the cries of the drakes and the rush of wings and you spot a single drake, tree-top high, in front of a flight of a half dozen and he turns just right, wings cupped, setting sun picking up the colors and drops with a loud splash. No cripple this time.

Stroking the plumage and watching woodies by the dozens rush by, some landing 10 feet away in the dusk, you hear your host and other companion calling and you know it's time to get the pictures taken, hoist a glass and relive the last hour. And after that, there'll be a filling meal at the farmhouse and a short ride to the big city and the lasting memory of early season duck shooting that nobody thought would be good, but it was. . .

On the Waterfront



A Stitch in Time

Edited by Capt. James N. Kerrick

It was a bright, sunny day as a Coast Guard Auxiliary vessel was cruising slowly past the Shirley Plantation on the James River. Theodore T. Antol of Flotilla 32, turned to his wife, Janet, and said: "We are now passing the Gravel Pits." The term is a favorite among James River boaters for a large bay near Hopewell, which is a popular recreational area. Suddenly, a boat passed at high speed, towing a water skier. As the skier came abreast of Antol's vessel, he suddenly pitched into the water in a welter of wake and waves. The occupants of the towing boat waived gaily to their fallen companion and shouted that they would return soon to retrieve him.

Ted Antol observed the erstwhile skier through binoculars and decided that he was acting strangely. The man in the water appeared to be stunned, so Ted moved his 32 foot cruiser to within a few feet of him and asked if he was all right. He received no answer, so without further delay he hauled the stunned man onto the vessel's swimming platform. As he did so, he saw bright blood spurting from the

victim's right temple where it had been deeply gashed by a water ski. Carefully, with Janet's help, Ted eased the injured man onto the vessel's deck, applied a butterfly patch to the wound, bandaged his head and wrapped an ice pack over the injury. The man recovered sufficiently to say that he was William P. Burkett of Hopewell.

Antol's next move was to run the boat to the Hopewell Yacht Club. On the way, he called Coast Guard Radio Station Richmond on FM, then used CB Channel 9, to get help. Fortunately, a passing automobile picked up his CB signal and passed the information to the Hopewell police and emergency crew. By the time Ted was pulling into the Hopewell Yacht Club, Burkett's tow-boat and friends had returned and followed them in. Waiting on the pier was the Hopewell Emergency Crew. Antol accompanied Burkett to John Randolph Hospital, where the injured skier was treated for six hours, receiving 17 deep stitches and four superficial stitches. Ted Antol now has another good friend, Bill Burkett.

Outdoor Notebook

Wardens Now On Channel 9

As part of the continuing effort to make Game Wardens more accessible to the public, CB radios have now been added to the warden's equipment.

According to Major Gerald Simmons, Assistant Chief of Law Enforcement for the Virginia Game Commission: "Wardens are now monitoring CB Channel 9 routinely at all times when on patrol." The radios are wired with a "Channel 9 Priority" which enables the officer to receive calls on this channel regardless of the channel to which the unit is tuned.

One of the big advantages of the program that Simmons foresees is that wildlife violations can more easily be reported while they are in progress. Additionally, the caller may remain anonymous while making the call to the warden.

Boating Access Available

The new and updated *Boating Access to Virginia Waters* is now available for Virginia boating enthusiasts.

Newly revised, this publication is a most for those who pursue waterfront activities in the Old Dominion. Game Commission ramp locations are given, as well as an updated list of marinas available to the boater.

Boating Access to Virginia Waters is free. Write to: Boating Access, P.O. Box 11104, Richmond, Virginia, 23230.

OCTOBER, 1979

Back Bay Best for Waterfowl



Virginia's Back Bay National Wildlife Refuge is featured in a new book, *Guide to the National Wildlife Refuges*, being published by Anchor Press/Doubleday in July.

According to the book 20,000 whistling swans can sometimes be seen in a single two-day period in fall migration at Back Bay, which also has posted highest in the nation in the annual Audubon Christmas Count for such species as gannets, snow geese, red-throated loons and others. Excellent wildlife sightings are possible yearround at this coastal sanctuary, one of almost 400 U.S. national wildlife refuges described in the book.

U.S. national wildlife refuges, which were begun as a national project when President Theodore Roosevelt proclaimed tiny Pelican Island as a wild bird sanctuary in 1903, now cover more than 30 million acres in almost every state, including Alaska and Hawaii. They harbor wildlife called by Presi-

dent Russell Train of the World Wildlife Fund — U.S. "as diverse and interesting as that of any country in the world" — an extraordinary array of more than 220 species of mammals, more than 600 of birds, 250 of reptiles and amphibians, over 200 species of fish and uncounted numbers of plants, from wild orchids to unique kinds of palm trees.

Grizzly bear, bighorn sheep, elk and moose, rare and endangered whooping cranes, bald eagles, tiny and exquisite painted buntings, waterfowl in numbers that literally darken the sky — all are found at U.S. national wildlife refuges.

The book, by Laura and William Riley, is the first comprehensive guide ever published to these refuges, and it tells how to get there, when to go, and what are the outstanding natural residents in each place.

Guide to the National Wildlife Refuges is available at most book stores.

**Don't forget to watch
Virginia Wildlife every
Saturday morning at 6:30
on Richmond's WTVR, TV6!**

Virginia Hunters and Fishermen Pay for Their Sport

People who hunted and fished last year spent a record \$344 million on licenses, tags, permits and stamps, an increase of \$15 million over fiscal year 1977 totals, and including \$159 million for fishing licenses and \$185 million for hunting licenses. The revenues derived from these license sales enable states to conduct their fish and wildlife conservation and management programs.

In Virginia there were over 449 thousand paid hunting license holders and all of the licenses, tags, stamps and permits they purchased totaled over four million dollars. There were some 431 thousand licensed fishermen in Virginia in 1978 who paid over two million dollars in license and other fees to enjoy their sport.

The total number of hunting license holders in the United States was 16,277,225, up slightly from

16,197,015 in 1977. Fishing license holders declined from 27,324,396 in 1977 to 26,150,352 in 1978. Fish and Wildlife Service officials said that fluctuations in the number of hunting and fishing license holders are not unusual and may be related to weather conditions, changes in counting procedures, and a variety of other causes.

The number of license sales and license holders are not accurate indicators of the actual numbers of hunters and fishermen. Paid license holders do not include hunters or fishermen who are not required to buy a license. In many states, persons below or above certain ages are not required to buy licenses, and many coastal states do not require licenses for saltwater fishing. Some people purchase licenses in more than one state and are, therefore, counted more than once.

Some Calendars Left

We have a few of our 1979-80 Sportsman's Calendars left, so send your check today for \$2.00 payable to Treasurer of Virginia to: Sportsman's Calendar, P.O. Box 11104, Richmond, Virginia, 23230.

You'll find it invaluable in pursuing your outdoor activities, from hunting to birdwatching!

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In Nature's Garden

BY ELIZABETH MURRAY



WHY BE RED?

From our point of view, the bright red flowers of our wild flora are some of the showiest and most attractive plants of the area, and we wait eagerly for them to bloom each year. From the plant's point of view, giving pleasure to us is not sufficient reason for being red. It is actually rather difficult to give a comprehensive answer to the question, but one of our best clues comes from a look at pollination systems. Many red flowers have structures adapted for hummingbirds: long, floral tubes into which the little birds' beaks fit to search for the nectar at the base of the flower, and, incidentally, brush against the pollen. The eye of the hummingbird is more sensitive to light at the red end of the spectrum than that at the blue end, and so they are more attracted to red and orange objects, and if, having been drawn to a flower, they then find a mechanism especially designed for their nourishment, so much the better for them!

However, even flowers which are designed for hummingbirds cannot depend solely on them. Most flowers have back-up systems which will perform in the absence of the main agent. This consoles me in the case of the fire-pink, *Silene virginica*, pictured here, which blooms in our area in April, long before the ruby-throated hummingbird, *Archilochus colubris*, our only hummingbird, arrives from the south. The fire-pink must employ various types of insects to ensure its pollination.

Bee-balm, *Monarda didyma*, Virginia's largest mint, also blooms in some areas rarely visited by hummingbirds. Although it has a flower well-structured for the beak of a hummingbird, it must sometimes rely on other pollinators. However, it does not always do so as I can testify, having once looked out at my own clump of bee-balm to see a very busy hummingbird making what seemed like a quite systematic round of the open flowers.

The cardinal flower, *Lobelia cardinalis*, is our showiest lobelia, also structured to receive the hummingbird's bill. It can provide the bird with a moist environment too, since the plant always grows with its roots in, or near, water. It is found along stream banks and in damp meadows blooming in late summer when the hummingbirds have already been around for several months.

Even though I do not need the nectar, I am grateful that my eye, like that of the hummingbirds, can appreciate the bright red flowers of our summer scene, and I believe I am just as pleased to see them blooming as the pollinators are!



Bee Balm



Cardinal Flower



Fire Pink



JOHN W TAYLOR

The Cedar Waxwing

"Silky-tail" is how the scientific name, *bombicilla*, of the waxwing translates. "Silky" is an attempt to describe the wonderfully sleek, smooth texture of the plumage. It has a softness and a sheen like that of no other bird, a delicate, yet radiant bloom.

Equally entrancing are the nuances of color, so barely perceptible. Gradual blendings of brown, dove-gray and yellow are accented with touches of velvety black. The brown upperparts fade to light gray at the rump. The tail is darker, and tipped with bright yellow. A mask-like band of black begins at the bill, and continues back through the eye. A narrow band of white borders parts of the mask. The black throat merges with the brown breast, which fades into the yellow of the flanks and belly. The shafts of the inner secondaries are tipped with bright red, wax-like appendages that give the bird its name.

The crown feathers are often raised in a sharp, striking crest, but may be laid back close against the head. These feathers are a bit longer in the male bird, otherwise, the sexes are quite similar in appearance.

In many respects, waxwings are the mavericks of the bird world. Though migratory, their movements are never predictable, not at all regular. Their travels seem to depend on the type and quantity of food that is available. During the colder months, they wander about in flocks, pausing wherever they find a bountiful crop of fruits and berries, then passing on.

Almost any berry, wild or cultivated, seems agreeable to their taste. Cherries are a special favorite, as are wild grapes, blueberries and cedar berries. They relish the purplish fruits of the common privet.

A smaller percentage of animal food is taken when there is a ready and available source. Should a hatch of flies be discovered, waxwings gather, adeptly catching their prey flycatcher fashion. They linger long about trees infested with caterpillars or cankerworms, departing as soon as the bounty has been depleted.

The nesting period seems similarly dependent on

the food supply. New born fledglings are fed on insects (or other animal matter), so waxwings take advantage of special times of abundance. They may wait until August, or even September to nest, waiting, it appears, until the time is right. If the food source gives out, the birds may abandon the attempt, though eggs may already have been laid.

Most likely, this unusual dependence on food supply is a corollary of the gregarious instincts of the waxwing. A dozen or more birds together need much more to eat than would a single forager.

Perhaps this is why waxwings are less communal during nesting time, when there are more mouths to feed. Often a pair will nest in isolation, or in the company of one another. Rarely, there are colonies of breeding pairs, a dozen or more nests in close association. In such cases, the parent birds keep in close company even when in search of food.

In keeping with their other eccentricities, waxwings select a wide variety of nesting sites. The nests are nearly always in trees, either hardwood or conifer, but may be anywhere from three to seventy feet off the ground. They may be open and exposed, or hidden deep within the foliage of a spruce or hemlock. Waxwing nests have also been placed in lamp-posts, mail boxes and in crevices on cliffsides.

Whatever material is at hand is used in construction. In the north, where it grows extensively, the entire nest may be of usnea moss. Bits of cloth and plastic have been incorporated along with such natural materials, as pine needles, twigs and grasses.

Dark scrawlings mark the pale blue eggs, which take two weeks to hatch. The young are born naked, but soon assume juvenile plumage, a non-descript brown with lighter streakings. By late fall they have molted, and look like their parents.

The waxwing hardly has a voice to speak of, and no song at all. The note is a high-pitched, sibilant hiss, varying only in intensity. Several writers mention another note, a light warble, audible for but a short distance.

The waxwing is common, but quite irregular in its occurrence throughout Virginia. In summer few are seen east of the Blue Ridge, but they nest commonly in the Shenandoah Valley and in the cooler, higher ridges.



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